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(71)Applicant : TOSHIBA CORP

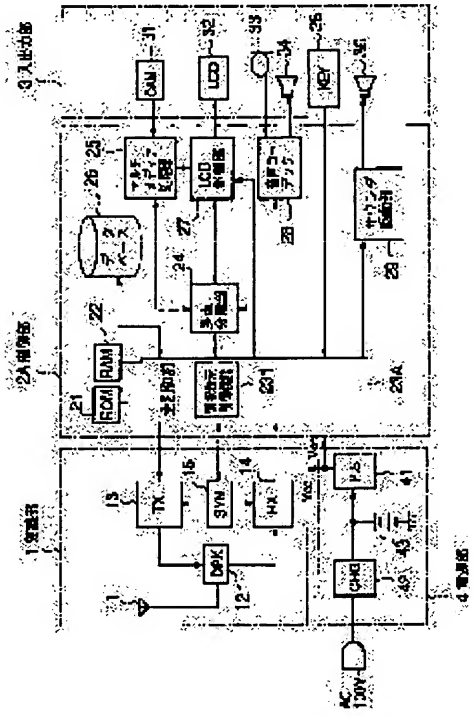
(72)Inventor : KATO TOMOKO
OWADA RYOHEI

(54) COMMUNICATION TERMINAL

(57)Abstract:

PROBLEM TO BE SOLVED: To perform television conversation in an appropriate state, depending on the opposite party or the conversation time, by making possible to perform conversation without displaying the image of the face of the opposite party as required.

SOLUTION: Animation video data for reminding a opposite party is prestored, as alternative video, in a data base 26 in correspondence with each opposite party. Immediately after starting conversation, an animation video stored in the data base 26 is displayed on an LCD 32 in place of the image of the opposite party received from the terminal thereof. Every time a user inputs a display switching command at a key input section 35, the display image is switched alternately between the animation video and the video received from the opposite party.



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* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] In the communication terminal equipped with the function which receives the video signal sent from a message partner's terminal unit during a message, and displays this receiving video signal A storage means to memorize the alternative video signal replaced with said receiving video signal, and an input means to input display change directions, The communication terminal characterized by providing a selection display-control means to display alternatively the alternative video signal memorized by said receiving video signal and said storage means during the message according to the display change directions inputted by said input means.
[Claim 2] It is the communication terminal according to claim 1 provide further a display change directions receiving means receive the display change directions sent from a message partner's terminal unit during a message, and carry out that said selection display-control means has further the function of displaying alternatively the alternative video signal memorized by said receiving video signal and said storage means according to the display change directions received by said display change directions receiving means as the description.
[Claim 3] It is the communication terminal according to claim 1 or 2 which matches said storage means with two or more message partners' each, memorizes the alternative video signal relevant to the message partner concerned, and is characterized by reading alternatively the alternative video signal corresponding to the message partner under message from said storage means in case said selection display-control means displays an alternative video signal.
[Claim 4] The communication terminal according to claim 1 or 2 characterized by providing further an alternative image receiving means to receive the alternative video signal sent from a message partner's terminal unit, and to memorize for said storage means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the communication terminal equipped with especially the visual telephone function with respect to the cable terminal unit connected to ISDN (Integrated Services Digital Network), and the migration terminal unit connected to a cellular-phone network or PHS (Personal Handyphone System).
[0002]
[Description of the Prior Art] In recent years, the communication terminal which made the visual telephone possible using the communication network of broadbands, such as ISDN and PHS, is put in practical use. Since it can talk over the telephone while speakers look at a partner's face image mutually if this kind of equipment is used, the message with presence like [when talking by actually meeting] is attained.
[0003] However, stress may be memorized to talk over the telephone with a message partner, a duration-of-a-call band, etc., looking at a phase sign language person's face image. In such a case, a speaker talks over the telephone by generally turning away a face and one's eyes from a drop in many cases. However, in the communication terminal with a visual telephone function, a camera approaches a drop and is installed. For this reason, if a speaker turns away a face and his eyes from a drop, it is picturized with a camera, and that condition will be transmitted to a message partner's terminal unit as it is, and will be displayed on it, there is a possibility of giving a phase sign language person displeasure, and it is not very desirable.
[0004]
[Problem(s) to be Solved by the Invention] Since a phase sign language person's face image is always displayed to have stated above during a message with a communication terminal with the conventional visual telephone function, depending on a phase sign language person or a duration-of-a-call band, a speaker may memorize stress.
[0005] The place which this invention was made paying attention to the above-mentioned situation, and is made into that purpose enables it to talk over the telephone, without displaying a sending [by the phase sign language person]-according to the demand of speaker image, and is to offer the communication terminal which enabled it to perform a television message with a suitable gestalt according to a message partner or duration of a call by this.
[0006]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, this invention receives the video signal sent from a message partner's terminal unit during a message, and in the communication terminal equipped with the function which displays this receiving video signal, it newly has a storage means memorize the alternative video signal replaced with the above-mentioned receiving video signal, an input means input display change directions, and a selection display-control means. And the alternative video signal memorized by the above-mentioned receiving video signal and the above-mentioned storage means during the message with the selection display-control means according to the

display change directions inputted from the above-mentioned input means is displayed alternatively.
[0007] Therefore, if a speaker inputs display change directions during a message according to this invention, the image for which a speaker wishes will be alternatively displayed among alternative images, such as an animation image beforehand remembered to be a phase sign language person's face image. For this reason, a speaker can talk over the telephone by displaying an alternative image with a phase sign language person, a duration-of-a-call band, etc., and the stress which a speaker senses by this is mitigated. Moreover, at this time, since turning away a face and one's eyes from a drop is lost, a speaker does not give a phase sign language person displeasure. On the other hand, when a phase sign language person's face needs to be checked, by inputting display change directions, the face image of the phase sign language person who received can be displayed as it is, and, thereby, the purpose of visual telephone functional original can be achieved.
[0008] That is, it becomes possible to perform a television message with the suitable gestalt for which a speaker wishes according to a message partner or duration of a call.
[0009] Moreover, this invention establishes further a display change directions receiving means to receive the display change directions sent from a message partner's terminal unit during a message. And in a selection display-control means, it is characterized also by enabling it to display alternatively the alternative video signal memorized by the receiving video signal and the storage means according to the display change directions received by the above-mentioned display change directions receiving means.
[0010] By doing in this way, even when the alternative image is being displayed while one speaker talks over the telephone, the image which the terminal unit of the speaker of another side transmitted instead of the alternative image will be displayed on one speaker's terminal unit because the speaker of another side which is the message partner transmits display change directions. That is, it becomes [whether the image displayed on one speaker's terminal unit is made into a receiving image or it is made an alternative image, and] possible to change from the terminal unit of the speaker of another side remotely. Therefore, this transmitting image can be certainly displayed of a speaker's own volition of another side to transmit and display [speaker / of another side] shown images, such as a map and a surrounding situation, on one speaker's terminal unit.
[0011] Furthermore, in case this invention memorizes the alternative video signal relevant to the message partner of a matching lever to two or more message partners' each and makes the above-mentioned storage means display an alternative image on it with a selection display-control means, in it, reading alternatively the alternative video signal corresponding to the message partner under message from the above-mentioned storage means also carries out as the description.
[0012] By doing in this way, the image relevant to the message partner concerned can be replaced with and displayed on an animal similar to for example, a message partner's ambient atmosphere, the animation of a character, an illustration, a portrait, etc. for every message partner as an alternative image. For this reason, even if the speaker is displaying the alternative image, he becomes possible [being reminded of a message partner].
[0013] Moreover, an alternative image may be constituted so that the alternative video signal sent from a message partner's terminal unit may be received and it may memorize for a storage means. If it does in this way, a message partner's terminal unit can be made to be able to memorize by the ability making into an alternative image the image for which the phase sign language person itself wishes, and it can be made to display.
[0014]
[Embodiment of the Invention] (1st operation gestalt) The 1st operation gestalt of the communication terminal concerning this invention memorizes beforehand the animation image which matches with each message partner, respectively and is reminded of a message partner in the database in equipment as an alternative image, and displays the animation image which replaced with the image of the message partner who received from the message partner terminal, and was memorized in the above-mentioned database from immediately after message initiation. Moreover, if a user inputs display change directions during a message, according to these directions, a display image will be changed to the partner image received from the message partner from the above-mentioned animation image.

[0015] The communication terminal of this operation gestalt is personal digital assistant equipment used with the migration communication system which adopted for example, the W-CDMA (Wideband-Code DivisionMultiple Access) method. It connects with the base station of migration communication system through a radio channel, and this personal digital assistant equipment is further connected to a message partner's communication terminal through a communication network from this base station. Cable public networks, such as a mobil radio communication network of others which adopted the TDMA (Time Division Multiple Access) method, PSTN (Public Switched Telephone Network), or ISDN (Integrated Services Digital Network), are alternatively used not to mention the mobil radio communication network which adopted the W-CDMA method as a communication network according to the class of a message partner's communication terminal.

[0016] Drawing 3 is the circuit block diagram showing the configuration of the communication terminal in this operation gestalt. This communication terminal consists of the wireless section 1, control-section 2A, the I/O section 3, and a power supply section 4.

[0017] In this drawing, the radio frequency signal which came through the radio channel from the base station which is not illustrated is inputted into a receiving circuit (RX) 14 through the antenna common machine (DPX) 12, after being received by the antenna 11 for a pocket communication link.

[0018] A receiving circuit 14 is equipped with the high-frequency amplifier, a frequency converter, a spectrum back-diffusion-of-electrons circuit, and a demodulator. That is, low noise magnification of the above-mentioned radio frequency signal is first carried out with a low noise amplifier. Next, it is mixed with the receiving station section oscillation signal generated from the frequency synthesizer (SYN) 15 in the frequency converter, and, thereby, a down convert is carried out at a received intermediate frequency signal or receiving baseband signaling. After the spectrum back diffusion of electrons of the input signal after this down convert is carried out in a spectrum back-diffusion-of-electrons circuit, the digital recovery of it is carried out with a demodulator. As a recovery method, the rectangular recovery method corresponding to a QPSK (Quadratur PhaseShift Keying) method is used, for example. In addition, the frequency of the receiving station section oscillation signal generated from the above-mentioned frequency synthesizer 15 is directed from main control section 23A prepared in control-section 2A.

[0019] The recovery signal outputted from the above-mentioned demodulator is inputted into control-section 2A. Control-section 2A is equipped with ROM (Read Only Memory)21 and RAM (Random Access Memory)22 attached to main control section 23A and this control-section 23A, the demultiplexing section 24, the multimedia processing section 25, a database 26, the LCD (Liquid Crystal Display) control section 27, and the voice sign decode section (a voice codec is called henceforth) 28. The various programs which control actuation of a terminal are beforehand memorized by ROM21. At RAM22, in case the various above-mentioned programs are performed, required control data, transmission or receiving image data, etc. is saved temporarily.

[0020] It is identified whether in main control section 23A, it is control information or it is multimedia information, and if the above-mentioned recovery signal is multimedia information, it will be supplied to the demultiplexing section 24. The demultiplexing section 24 divides the above-mentioned multimedia information into voice data and image data for example, according to an H.223 demultiplexing method. The separated receiving voice data is inputted into the voice codec 28, and voice decode is carried out here. And the sound-reinforcement output of the sound signal reproduced by this is carried out from the loudspeaker 34 of the I/O section 3. On the other hand, receiving image data are inputted into the multimedia processing section 25, and image decode processing is carried out here. And the receiving video signal reproduced by this is supplied and displayed on LCD32 of the I/O section 3 through the LCD control section 27.

[0021] In addition, the above-mentioned receiving image data are stored in RAM22 if needed. Moreover, the various management information showing the operating state of the self-equipment outputted from main control section 23A is also displayed on LCD32. As management information displayed, there are a detection value of telephone directory data or received field strength, a residue of a dc-battery, etc., for example. Moreover, 36 is a sounder, 29 is a sounder mechanical component, and the

sound-reinforcement output of the control tones, such as arrival-of-the-mail singing, is carried out by these.

[0022] On the other hand, a user's transmission sound signal outputted from the microphone 33 of the I/O section 3 is inputted into the voice codec 28 of control-section 2A, and after voice coding is carried out here, it is inputted into the demultiplexing section 24. Moreover, image data, such as a speaker's face picturized with the camera (CAM) 31, are inputted into the multimedia processing section 25 of control-section 2A, and after image coding processing is performed here, they are inputted into the above-mentioned demultiplexing section 24. In the demultiplexing section 24, the voice data and image data by which coding was carried out [above-mentioned] are multiplexed in the format specified to an H.223 demultiplexing method. And this multiplexed transmit data is inputted into the sending circuit (TX) 13 of the wireless section 1 from main control section 23A.

[0023] A sending circuit 13 is equipped with a modulator, a spectrum diffusion circuit, a frequency converter, and transmitted power amplifier. After digital modulation of the above-mentioned transmit data is first carried out with a modulator, spectrum diffusion process of it is carried out by the predetermined diffusion sign in a spectrum diffusion circuit. A QPSK method is used as a modulation technique. The rise convert of the sending signal after spectrum diffusion is carried out at the signal of a radio-transmission band by being mixed with the sending-station section oscillation signal generated from the frequency synthesizer 15 in the frequency converter. And after being amplified by the transmission level predetermined with transmitted power amplifier, the antenna 11 for a pocket communication link is supplied through the antenna common machine 12, and it is transmitted towards the base station for a pocket communication link which is not illustrated from this antenna 11.

[0024] a power supply section -- four -- **** -- a lithium ion battery -- etc. -- a dc-battery -- 43 -- this -- a dc-battery -- 43 -- charging -- a sake -- a charge circuit (CHG) -- 42 -- an electrical potential difference -- generation -- a circuit -- (-- PS --) -- 41 -- preparing -- having -- **** . The electrical-potential-difference generation circuit 41 consists of a DC to DC converter, and generates the predetermined supply voltage Vcc based on the output voltage of a dc-battery 43.

[0025] By the way, it matches with the telephone number of each message partner by whom a television message is assumed between the end of a local, and the animation image data relevant to the message partner concerned are memorized by the database 26. This animation image data is used as alternative image data displayed instead of the partner receiving image data which come from the terminal unit of a communications partner. An example of the above-mentioned animation image data memorized by drawing 2 at the database 26 is shown.

[0026] Main control section 23A consisted of a microprocessor, and, in addition to the usual control function, is equipped with the selection display-control function 231 for connection control of a radio channel, the message control after communication link establishment, etc. as a control function concerning this invention.

[0027] When the message which used the visual telephone function is started, the selection display-control function 231 reads the animation image data matched with the message partner from a database 26, replaces this animation image data with the image data of the message partner who received from the message partner terminal, and is made to display it on LCD32. Moreover, if a user inputs display change directions in the key input section (KEY) 35 during a message, according to these directions, display image data will be changed to the partner image data received from the message partner from the above-mentioned animation image data. Similarly hereafter, whenever a user inputs display change directions in the key input section (KEY) 35, display image data are changed by turns between partner receiving image data and animation image data.

[0028] Next, actuation of the communication terminal constituted as mentioned above is explained according to the control procedure of main control section 23A. Drawing 3 is a flow chart which shows the control procedure of main control section 23A, and its contents.

[0029] In a waiting condition, main control section 23A is supervising arrival and submission operation of arrival of the mail, respectively. Suppose that submission operation was performed so that the user of a self terminal unit may perform the message using a visual telephone function among the partners of

arbitration temporarily now in this condition. If it does so, main control section 23A will detect this submission operation by step 3a, will shift to step 3b, and will perform connection control here. And if a communication link is established between a message partner's terminal units by this connection control, it will shift to step 3e from step 3c henceforth, and message control will be started.

[0030] By the way, main control section 23A reads the animation image data corresponding to a message partner from a database 26 in step 3d at this time. And this animation image data is replaced with the receiving image data which come from a message partner's terminal unit, and the LCD control section 27 is supplied. For this reason, instead of the receiving image data from a message partner, the above-mentioned animation image is displayed on LCD32 with the transmitting image of self.

[0031] For example, when a message partner has the telephone number of "090-1234-5678" now, the animation image data M shown in drawing 2 are read, and it is displayed on LCD32 with a self image. Drawing 4 (a) shows an example of the display result. Therefore, a user can perform the message using a visual telephone function with the same posture as usual, without displaying a message partner's face image.

[0032] On the other hand, main control section 23A is supervising the input and message termination actuation of display change directions by step 3f and step 3i during a message, respectively. And suppose that the user of the terminal unit of self [this condition] inputted display change directions by carrying out the depression of the predetermined key in the key input section 35.

[0033] If it does so, main control section 23A will shift to step 3g from step 3f, and will perform display change control here. That is, it replaces with the animation image data M current on display in this case, and a message partner's receiving image data by which decode playback was carried out in the multimedia processing section 25 are chosen, and directions are given to the LCD control section 27 in order to display this receiving image data. As a result, the receiving image sent by the message partner is displayed on LCD32 instead of the animation image currently displayed till then. Drawing 4 (b) shows an example of the display result. Therefore, a user becomes possible [checking a message partner's face image if needed during a message].

[0034] Similarly hereafter, whenever a user inputs display change directions in the key input section 35, main control section 23A shifts to step 3g from step 3f, and is changed by turns between the image which received the display image in LCD32 from the message partner here, and the animation image read from the database 26.

[0035] In addition, while displaying the animation image as a display image, main control section 23A generates the message of the purport which does not show the receiving image in step 3h, and it adds or includes, and transmits to control data or transmitting image data, and you may make it display this message on a message partner's terminal unit.

[0036] Finally, after a message is completed, main control section 23A shifts to step 3j from step 3i, performs cutting control of a communication link here, and returns to a waiting condition.

[0037] The animation image data which match with each message partner, respectively and associate the 1st operation gestalt with a message partner in a database 26 as stated above are beforehand memorized as an alternative image. The animation image which replaced with the image of the message partner who received from the message partner terminal, and was memorized by the above-mentioned database 26 from immediately after message initiation is displayed on LCD32. Whenever a user furthermore inputs display change directions in the key input section 35 during a message, he is trying to change a display image by turns between the above-mentioned animation image and the receiving image from a message partner.

[0038] Therefore, the image for which a speaker wishes can be alternatively displayed in a speaker inputting display change directions into arbitration during a message among a phase sign language person's face image, and the animation image beforehand memorized in the database 26. For this reason, when a phase sign language person's image needs to be displayed neither with a phase sign language person nor a duration-of-a-call band, it can talk over the telephone, displaying an animation image, and the stress which a speaker senses by this can be mitigated. Moreover, since it is lost that a speaker turns away a face and his eyes from LCD32 at this time, displeasure is not given to a phase sign language

person. On the other hand, when a phase sign language person's face needs to be checked, the face image of the phase sign language person who received can be displayed as it is by inputting display change directions. For this reason, the message which used the visual telephone function if needed can also be performed.

[0039] While displaying the animation image, it adds or includes, and he transmits to control data or transmitting image data, and is trying to display on a message partner's terminal unit the message of the purport which does not show the receiving image with this operation gestalt furthermore. For this reason, in order that a message partner's speaker may also transmit a self-image, it becomes possible for it to become unnecessary to straighten oneself and to perform a television message with an easy posture.

[0040] (2nd operation gestalt) The 2nd operation gestalt of the communication terminal concerning this invention is equipped with the function which carries out the additional storage of the animation image data sent by the message partner at the above-mentioned database while it memorizes one which matches with each message partner's each and is reminded of a message partner in a database, or two or more animation images as an alternative image. And during a message, according to the contents of directions, the partner image received from the message partner and one or more animation images corresponding to the message partner concerned are changed alternatively, and are displayed in the user of self-equipment inputting display change directions.

[0041] Drawing 5 is the circuit block diagram showing the configuration of the communication terminal concerning this operation gestalt. In addition, in this drawing, the same sign is given to the same part as said drawing 1 , and detailed explanation is omitted.

[0042] A database 26 can be matched with each message partner's telephone number, and can memorize one or more animation image data. Drawing 6 shows an example of the storage result, and numbers M1 and M2 and -- are given to the animation image data corresponding to it for every message partner.

[0043] Main control section 23B is equipped with the alternative image receiving storage control function 232 and the selection display-control function 233 as a control function concerning this invention.

[0044] When alternative image data are transmitted from a message partner's terminal unit during a message, the alternative image receiving storage control function 232 receives this alternative image data, is matched with the message partner of transmitting-in database 26 origin, and carries out additional storage.

[0045] When the message which used the visual telephone function is started, the selection display-control function 233 reads one out of two or more animation image data corresponding to the message partner memorized by the database 26, replaces this animation image data with the image data of the message partner who received from the message partner terminal, and is made to display it on LCD32. Moreover, if a user inputs display change directions in the key input section (KEY) 35 during a message, according to the contents of directions, display image data will be changed to a message partner's receiving image data, or the animation image data of others corresponding to the message partner concerned.

[0046] Next, actuation of the communication terminal constituted as mentioned above is explained according to the control procedure of main control section 23B. Drawing 7 is a flow chart which shows the control procedure of main control section 23B, and its contents, and the same sign is given to the same part as said drawing 3 .

[0047] If a communication link is established between a message partner's terminal units by connection control in step 3b, main control section 23B will choose and read one in step 3d out of two or more animation image data which correspond to a message partner from a database 26. And this animation image data is replaced with the receiving image data which come from a message partner's terminal unit, and is supplied to the LCD control section 27. For this reason, instead of the receiving image data from a message partner, it is displayed on LCD32 with the transmitting image of the self of an animation image one.

[0048] For example, when a message partner has the telephone number of "090-1234-5678" now, the

animation image data M2 shown in drawing 6 are read, and it is displayed on LCD32 with a self image. Drawing 8 (a) shows an example of the display result. Therefore, a user can perform the message using a visual telephone function with the same posture as usual, without displaying a message partner's face image.

[0049] Now, it is supervising whether as for main control section 23B, in step 7a, a message partner's terminal unit to alternative image data came during the message. And if it replaces with the data of a speaker's face image picturized, for example with the camera and animation image data come, by step 7b, this animation image data will be matched with the telephone number of the message partner in a database 26, and will be memorized. In addition, the arrival monitor of alternative image data is performed based on the image classification information included in control data or image data.

[0050] Moreover, main control section 23B is supervising the input and message termination actuation of display change directions by step 7c and step 3i during a message, respectively. And suppose that the user of the terminal unit of self [this condition] inputted display change directions by the predetermined key stroke in the key input section 35. If it does so, main control section 23B will shift to step 7d from step 7c, will analyze the contents of display change directions here, and will perform display change control as follows by step 7e according to these analyzed contents of directions.

[0051] Namely, if a user inputs display change directions "1n", out of two or more animation image data M1 and M2 corresponding to a message partner, and --, the n-th animation image data will be read and this data will be displayed on LCD32. For example, now, during the message with the message partner of the telephone number "090-1234-5678", supposing display change directions "11" are inputted, the animation image data M1 shown in drawing 6 will be read from a database 26, and this animation image data M1 will be displayed by LCD32. Drawing 8 (c) shows an example of the display result after this change. Therefore, a user can choose and display one on arbitration out of these animation image data, when two or more animation image data corresponding to a message partner are memorized.

[0052] On the other hand, when a user inputs display change directions "2", it replaces with animation image data current on display, and a message partner's receiving image data by which decode playback was carried out in the multimedia processing section 25 are chosen, and directions are given to the LCD control section 27 in order to display this receiving image data. As a result, the receiving image sent by the message partner is displayed on LCD32 instead of the animation image currently displayed till then. Drawing 8 (b) shows an example of the display result. Therefore, a user becomes possible [checking a message partner's face image if needed during a message].

[0053] In addition, when the number of animation image data on display is again specified by display change directions, main control section 23B does not need to judge these display change directions to be invalid, and does not need to perform a display change.

[0054] Similarly hereafter, whenever a user inputs display change directions in the key input section 35, main control section 23B shifts to step 7d from step 7c, analyzes the contents of display change directions here, and performs display change control of image data by step 7e according to these analyzed contents of directions.

[0055] In addition, while displaying the animation image as a display image, in step 7f, main control section 23B generates the message of the purport which does not show the receiving image, and it adds or includes, and transmits to control data or transmitting image data, and it displays this message on a message partner's terminal unit.

[0056] Thus, it matches with each communications partner, two or more animation image data M1 and M2 and -- are made a database 26 memorizable, and these animation image data are alternatively expressed to LCD32 as the 2nd operation gestalt according to the contents of the display change directions which the user inputted. For this reason, the animation image data which a user wishes to have can be chosen and displayed on arbitration out of two or more animation image data.

[0057] Moreover, when it has the alternative image receiving storage control function 232 and alternative image data are transmitted from a message partner's terminal unit during a message, after receiving this alternative image data, it matches with the message partner of transmitting-in database 26 origin, and is made to carry out additional storage with this operation gestalt. For this reason, each user

can make the animation image data which self wishes to have to a message partner's terminal unit able to send and memorize, and can replace with and display this animation image data on an own face image.

[0058] Furthermore, also in this operation gestalt, the message of the purport which does not show the receiving image while displaying the animation image as well as said 1st operation gestalt is sent to a message partner's terminal unit, and it is displayed. For this reason, in order that a message partner's speaker may also transmit a self-image, it becomes possible for it to become unnecessary to straighten oneself and to perform a television message with an easy posture.

[0059] (3rd operation gestalt) The 2nd operation gestalt of the communication terminal concerning this invention memorizes one which matches with each message partner's each and is reminded of a message partner in a database, or two or more animation images as an alternative image. Moreover, the display change directions which were equipped with the function to receive the display change directions transmitted from a message partner's terminal unit, and the user inputted by key input actuation during the message, The partner image received from the message partner according to the contents of directions based on the display change directions from the message partner received by the above-mentioned reception function, One or more animation images corresponding to the corresponding message partner who was memorized by the above-mentioned database are changed alternatively, and are displayed.

[0060] Drawing 9 is the circuit block diagram showing the configuration of the communication terminal concerning this operation gestalt. In addition, in this drawing, the same sign is given to the same part as said drawing 1 or drawing 2 , and detailed explanation is omitted.

[0061] In a database 26, as illustrated to drawing 6 , it can match with each message partner's telephone number, and one or more animation image data M1 and M2 and -- can be memorized.

[0062] Main control section 23C is equipped with the change directions reception detection function 234 and the selection display-control function 235 as a control function concerning this invention.

[0063] Among these, the change directions reception detection function 234 will notify these display change directions to the selection display-control function 235, if it supervises [whether display change directions came from a message partner's terminal unit during the message, and] and display change directions come.

[0064] When the message which used the visual telephone function is started, the selection display-control function 235 reads one out of two or more animation image data corresponding to the message partner memorized by the database 26, replaces this animation image data with the image data of the message partner who received from the message partner terminal, and is made to display it on LCD32. Moreover, when a user inputs display change directions in the key input section (KEY) 35 during a message, and when display change directions are sent from a message partner by the above-mentioned change directions reception detection function 234, according to the contents of directions, display image data are changed to a message partner's receiving image data, or the animation image data of others corresponding to the message partner concerned.

[0065] Next, actuation of the communication terminal constituted as mentioned above is explained according to the control procedure of main control section 23C. Drawing 10 is a flow chart which shows the control procedure of main control section 23C, and its contents, and the same sign is given to the same part as said drawing 3 .

[0066] If a communication link is established between a message partner's terminal units by connection control in step 3b, main control section 23C will choose and read one in step 3d like each operation gestalt described previously out of two or more animation image data which correspond to a message partner from a database 26. And this animation image data is replaced with the receiving image data which come from a message partner's terminal unit, and is supplied to the LCD control section 27. For this reason, instead of the receiving image data from a message partner, it is displayed on LCD32 with the transmitting image of the self of an animation image one.

[0067] For example, when a message partner has the telephone number of "090-1234-5678" now, the animation image data M2 shown in drawing 6 are read, and it is displayed on LCD32 with a self image.

[0068] Now, main control section 23C is supervising arrival of the display change directions from the input of the display change directions by the key input section 35, and a message partner's terminal unit in step 10a and step 10b, respectively during a message. And suppose that the user of equipment inputted display change directions in the key input section 35 in the end of a local in this condition, or it included in the control data from a message partner's terminal unit, and display change directions came. If it does so, main control section 23C will shift to step 10c from step 10a or step 10b, will analyze the contents of display change directions here, and will perform display change control by step 10d according to these analyzed contents of directions.
[0069] This display change control action is the same as the 2nd operation gestalt described previously. Now during the message with the message partner of the telephone number "090-1234-5678" If a user inputs display change directions "11" or display change directions "11" come from a message partner's terminal unit Inside to two or more animation image data M1 and M2 corresponding to a message partner and the animation image data M1 of -- are read, and this animation image data M1 is displayed on LCD32. An example of the display result after this change is shown in drawing 8 (c).
[0070] On the other hand, when a user inputs display change directions "2" or display change directions "2" come from a message partner's terminal unit, instead of animation image data current on display, a message partner's receiving image data by which decode playback was carried out in the multimedia processing section 25 are chosen, and it is displayed on LCD32. An example of the display result is shown in drawing 8 (b).
[0071] In addition, when the number of animation image data on display is again specified by display change directions, main control section 23C does not need to judge these display change directions to be invalid, and does not need to perform a display change.
[0072] Similarly hereafter, whenever the user of self-equipment inputs display change directions in the key input section 35, or whenever display change directions come from a message partner's terminal unit, it shifts to step 10c from step 10a or 10b, the contents of display change directions are analyzed here, and main control section 23C carries out display change control of image data by step 10d according to these analyzed contents of directions.
[0073] In addition, it is in the condition which shows the animation image as a display image, and is the same as that of the 1st and 2nd operation gestalten which stated previously about the point generates the message of the purport which does not show the receiving image in step 10e, turns this message to a message partner's terminal unit, transmits, and you may make it display.
[0074] Thus, with the 3rd operation gestalt, not only when the user of equipment inputs display change directions in the key input section 35 in the end of a local, but when display change directions come from a message partner's terminal unit, a display image changes according to the contents of directions. for this reason -- for example, in a message partner's terminal unit, when that user transmits the image data shown [situation / a map, / surrounding] and wants to make it display on a message partner's terminal unit, the transmitting image from self-equipment can be displayed on a message partner's terminal unit of a phase sign language person's volition own [above-mentioned].
[0075] (4th operation gestalt) The 4th operation gestalt of the communication terminal concerning this invention memorizes the animation image which matches with each message partner's each and is reminded of a message partner in a database as an alternative image. Alike and the user of self-equipment inputs display change directions in the key input section 35 in the condition of performing two or more message partners, simultaneously a meeting message -- ** -- Or whenever display change directions come from a message partner's terminal unit, according to the contents of the display change directions, about the corresponding message partner, the receiving partner image and one or more animation images corresponding to the message partner concerned are changed alternatively, and are displayed.
[0076] Drawing 11 is the circuit block diagram showing the configuration of the communication terminal concerning this operation gestalt. In addition, in this drawing, the same sign is given to the same part as said drawing 1 , and detailed explanation is omitted.
[0077] A database 26 is matched with each message partner's telephone number, and animation image

data are memorized, respectively. An example of the storage result is shown in drawing 2 .
[0078] Main control section 23D is equipped with the meeting message control function 236, the change directions reception detection function 237, and the selection display-control function 238 as a control function concerning this invention.
[0079] The meeting message control function 236 establishes a communication link between the message partner terminal units with which plurality differs in coincidence, respectively, enables the meeting message by three or more persons between the partner terminal units of these plurality, and displays a self-image and the image about two or more message partners under message on LCD32, respectively.
[0080] The change directions reception detection function 237 will notify these display change directions to the selection display-control function 238, if it supervises [whether display change directions came from each terminal unit of a message partner during the message, and], respectively and display change directions come.
[0081] If the meeting message which used the visual telephone function is started, the selection display-control function 238 will read the corresponding animation image data from a database 26 for every message partner, and will display these animation image data on LCD32 with the image data of self. Moreover, when the user of self-equipment inputs display change directions in the key input section (KEY) 35 during a message, and when display change directions are sent from a message partner by the above-mentioned change directions reception detection function 237, the display image data of the message partner correspond according to the contents of directions are changed alternatively between the receiving image data from a message partner, and animation image data.
[0082] Next, actuation of the communication terminal constituted as mentioned above is explained according to the control procedure of main control section 23D. Drawing 12 and drawing 13 are flow charts which show the control procedure of main control section 23D, and its contents, and the same sign is given to the same part as said drawing 3 and drawing 10 R> 0.
[0083] If a communication link is established between the 1st message partner's terminal units by connection control in step 3b, main control section 23D will choose and read one in step 3d like the 3rd operation gestalt described previously out of two or more animation image data which correspond to the message partner of the above 1st from a database 26. And this animation image data is replaced with the receiving image data which come from the 1st message partner's terminal unit, and is supplied to the LCD control section 27. For this reason, instead of the receiving image data from the 1st message partner, it is displayed on LCD32 with the transmitting image of the self of an animation image one. For example, when the 1st message partner has the telephone number of "090-1234-5678" now, the animation image data M shown in drawing 2 are read, and it is displayed on LCD32 with a self image.
[0084] Moreover, in this condition, main control section 23D is supervising whether in step 13a, submission operation to another message partner was performed, and presupposes that the user performed submission operation to the 2nd message partner by this condition. If it does so, main control section 23D will shift to step 3b from step 13a, and will perform connection control here. And if a communication link is established between the 2nd message partner's terminal units by this connection control, in step 13e, message control will be started henceforth.
[0085] If a message is started between this 2nd message partner's terminal units, main control section 23D will read the animation image data corresponding to the message partner of the above 2nd from a database 26 in step 13d like the case of said 1st communications partner. And this animation image data is replaced with the receiving image data which come from the 2nd message partner's terminal unit, and is supplied to the LCD control section 27. For this reason, in addition to the transmitting image of self on display, and the 1st message partner's animation image, both the animation images of the 2nd communications partner of the above are already displayed on LCD32.
[0086] For example, when the 2nd message partner has the telephone number of "042-345-6789" now, the animation image data N shown in drawing 3 are read, and it is displayed on LCD32 with a self image and the animation image M of the 1st communications partner. Drawing 14 (c) shows an example of the display result. Therefore, a user can perform the message using a visual telephone function at this

time, without displaying each 1st and 2nd message partners and the receiving image from that partner.
[0087] Now, main control section 23D is supervising arrival of the display change directions from the input [of the display change directions by the key input section 35], 1st, and 2nd message partners in steps 10a and 10b and steps 13f and 13g, respectively during the above-mentioned meeting message. And suppose that the user of equipment inputted the display change directions about the 1st message partner in the key input section 35 in the end of a local in this condition, or it included in the control data from the 1st message partner's terminal unit, and display change directions came. If it does so, main control section 23D will shift to step 10c from step 10a or step 10b, will analyze the contents of display change directions here, and will perform display change control by step 10d according to these analyzed contents of directions.
[0088] Moreover, suppose that the user of equipment inputted the display change directions about the 2nd message partner in the key input section 35 in the end of a local, or it included in the control data from the 2nd message partner's terminal unit, and display change directions came. If it does so, main control section 23D will shift to step 13h from step 13f or step 13g, will analyze the contents of display change directions here, and will perform display change control by step 13i according to these analyzed contents of directions.
[0089] For example, when display change directions for a user to change to a receiving image about the 1st message partner are inputted or the same display change directions come from the 1st message partner, instead of the animation image data M current on display, the receiving image data of the 1st message partner by which decode playback was carried out in the multimedia processing section 25 are chosen, and it is displayed on LCD32. An example of the display result is shown in drawing 14 (a).
[0090] Moreover, when display change directions for a user to do receiving graphic display about the 2nd message partner are inputted or the same display change directions come from the 2nd message partner, instead of the animation image data N current on display, the receiving image data of the 2nd message partner by which decode playback was carried out in the multimedia processing section 25 are chosen, and it is displayed on LCD32. An example of the display result is shown in drawing 14 (d).
[0091] Moreover, [whether in the display condition shown in drawing 14 (c), display change directions for a user to do receiving graphic display about both 1st and 2nd message partners are inputted, and] Or when the same display change directions come from both 1st and 2nd message partners, instead of the animation image data N and M present on display, each 1st [by which decode playback was carried out in the multimedia processing section 25], and 2nd message partners' receiving image data are chosen, and it is displayed on LCD32. The display result is shown in drawing 14 (b).
[0092] Furthermore, also when a user inputs the display change directions about the 2nd message partner in the display condition shown in drawing 14 (a) or the same display change directions come from the 2nd message partner, it will be in the condition which the 2nd message partner's display image changes to a receiving image, and shows a display condition in drawing 14 (b). Also when similarly a user inputs the display change directions about the 1st message partner in the display condition shown in drawing 14 (d) or the same display change directions come from the 1st message partner, it will be in the condition which the 1st message partner's display image changes to a receiving image, and shows a display condition in drawing 14 (b).
[0093] On the other hand, in the condition that a selection indication of the receiving image is given, about all of the 1st and 2nd message partners When display change directions for a user to change to an animation image are inputted or the same display change directions come from a message partner Instead of the receiving image from a message partner current on display, the animation image read from the database 26 is chosen, and it is displayed on LCD32. That is, it changes from the display condition shown in drawing 14 (b) to the display condition shown in drawing 14 (c) or drawing 14 (a), and (d).
[0094] If the user of self-equipment inputs display change directions in the key input section 35 or display change directions come from a message partner's terminal unit every 1st and 2nd message partners similarly hereafter, the contents of display change directions will be analyzed and main control section 23D will carry out display change control of image data according to these analyzed contents of

directions.
[0095] In addition, it is in the condition which shows the animation image as a display image, and is the same as that of the 1st thru/or 3rd operation gestalt which stated previously about the point generates the message of the purport which does not show the receiving image in steps 10e and 13j, turns this message to a message partner's 1st or 2nd terminal unit, transmits, and you may make it display.
[0096] Thus, according to the 4th operation gestalt, according to arrival of the display change directions from the alter operation or the message partner of the display change directions by the user, a display image changes between a receiving image and an animation image for every message partner during a meeting message. For this reason, according to a demand of a message partner, a display image can be suitably changed for every message partner during a meeting message, corresponding to a user's hope.
[0097] (Other operation gestalten) Although the animation image to display was specified with display change directions with said 2nd and 3rd operation gestalten, the display order is beforehand defined about two or more of the animation images for every message partner, and whenever display change directions are inputted or it comes from a message partner, according to the above-mentioned display order, it may be made to indicate an animation image by selection.
[0098] Moreover, in case an animation image is chosen, you may make it specify a desired animation image by displaying the list of two or more animation images corresponding to a message partner on LCD32, and choosing with cursor etc. the image for which a user wishes from each of these animation images by which it was indicated by the list. In addition, two or more animation images corresponding to the same message partner are chosen as coincidence, and you may make it display them.
[0099] Furthermore, although said each operation gestalt explained taking the case of the case where an animation image is displayed as an alternative image, you may be a character, an illustration, a portrait, etc. and may make it display a still picture and an animation further.
[0100] Moreover, you may make it display the image associated with a message partner's attribute or this attribute as an alternative image. The mark which will be associated with that occupational description if it is those who have dealings of a message partner on business as an example, an icon, and an image can be displayed, and if it is those who are concentrating on the hobby with a message partner, the sport, etc., what displays the mark associated with the class of this hobby or sport, an icon, and an image can be considered.
[0101] Furthermore, as an input means of display change directions, the voice input means which used the microphone 33 in addition to the key input means, a handwriting input means, the input means by screen touch, the eye line input means that used the image processing, etc. may be used. Moreover, the input means using a partner's message voice is sufficient as changing, when the sound of the sound volume more than [which is in the voice of the partner under message, for example] fixed is contained etc.
[0102] Furthermore, according to the language identified by the strength of partner voice and recognition of partner voice, such as moving the part of opening of an alternative image which expresses a message partner's face, for example to compensate for change of a message partner's tone etc., the sequential change of coma delivery of animation or a screen to which the message partner was made to correspond may be performed.
[0103] Furthermore, adoption of the method transmitted by inserting or adding display change directions to image data as a transmission system of the display change directions between communication terminals, the method inserted and transmitted to a control channel, the method transmitted by other another channels, etc., etc. can be considered.
[0104] Furthermore, although said each operation gestalt explained the display action at the time of dispatch, this invention is applicable similarly at the time of arrival of the mail. However, in arrival of the mail, a database can be accessed based on the telephone number or the addresser name of the dispatch origin notified from a message partner's terminal unit or network, and it can carry out by displaying the alternative image searched by this.
[0105] Furthermore, the method which stores in a database the image picturized as a storage method of the alternative image to a database with the camera formed in the terminal unit, the method which inputs

into a terminal unit the image which picturized with another camera using radio means, such as various cables and short-distance data transmission technology, such as blue TSUUSU (Blue Tooth), a storage, etc., and memorizes it in a database are applicable.

[0106] In addition, about the class of communication terminal, that configuration, a display change control procedure, its contents, etc., in the range which does not deviate from the summary of this invention, it deforms variously and can carry out.

[0107]

[Effect of the Invention] In the communication terminal equipped with the function which receives the video signal sent from a message partner's terminal unit during a message in this invention as explained in full detail above, and displays this receiving video signal It newly has a storage means to match with a message partner the alternative video signal replaced with the above-mentioned receiving video signal, and to memorize it, an input means to input display change directions, and a selection display-control means. With this selection display-control means He is trying to display alternatively the alternative video signal memorized by the above-mentioned receiving video signal and the above-mentioned storage means during the message according to the display change directions inputted by the above-mentioned input means.

[0108] Therefore, according to this invention, it can talk over the telephone, without displaying a phase sign language person's face image according to a demand of a speaker, and the communication terminal which enabled it to perform a television message with a suitable gestalt according to a message partner or duration of a call by this can be offered.

[Translation done.]

* NOTICES *

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the communication terminal equipped with especially the visual telephone function with respect to the cable terminal unit connected to ISDN (Integrated Services Digital Network), and the migration terminal unit connected to a cellular-phone network or PHS (Personal Handyphone System).

[Translation done.]

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PRIOR ART

[Description of the Prior Art] In recent years, the communication terminal which made the visual telephone possible using the communication network of broadbands, such as ISDN and PHS, is put in practical use. Since it can talk over the telephone while speakers look at a partner's face image mutually if this kind of equipment is used, the message with presence like [when talking by actually meeting] is attained.
[0003] However, stress may be memorized to talk over the telephone with a message partner, a duration-of-a-call band, etc., looking at a phase sign language person's face image. In such a case, a speaker talks over the telephone by generally turning away a face and one's eyes from a drop in many cases. However, in the communication terminal with a visual telephone function, a camera approaches a drop and is installed. For this reason, if a speaker turns away a face and his eyes from a drop, it is picturized with a camera, and that condition will be transmitted to a message partner's terminal unit as it is, and will be displayed on it, there is a possibility of giving a phase sign language person displeasure, and it is not very desirable.

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EFFECT OF THE INVENTION

[Effect of the Invention] In the communication terminal equipped with the function which receives the video signal sent from a message partner's terminal unit during a message in this invention as explained in full detail above, and displays this receiving video signal It newly has a storage means to match with a message partner the alternative video signal replaced with the above-mentioned receiving video signal, and to memorize it, an input means to input display change directions, and a selection display-control means. With this selection display-control means He is trying to display alternatively the alternative video signal memorized by the above-mentioned receiving video signal and the above-mentioned storage means during the message according to the display change directions inputted by the above-mentioned input means.
[0108] Therefore, according to this invention, it can talk over the telephone, without displaying a phase sign language person's face image according to a demand of a speaker, and the communication terminal which enabled it to perform a television message with a suitable gestalt according to a message partner or duration of a call by this can be offered.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Since a phase sign language person's face image is always displayed to have stated above during a message with a communication terminal with the conventional visual telephone function, depending on a phase sign language person or a duration-of-a-call band, a speaker may memorize stress.
[0005] The place which this invention was made paying attention to the above-mentioned situation, and is made into that purpose enables it to talk over the telephone, without displaying a sending [by the phase sign language person]-according to the demand of speaker image, and is to offer the communication terminal which enabled it to perform a television message with a suitable gestalt according to a message partner or duration of a call by this.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The block diagram showing the functional configuration of the W-CDMA personal digital assistant equipment which is the 1st operation gestalt of the communication terminal concerning this invention.
[Drawing 2] Drawing showing an example of the alternative image data memorized by the database of the terminal unit shown in drawing 1 .
[Drawing 3] The flow chart which shows the procedure and the contents of display change control which are performed in the main control section of the terminal unit shown in drawing 1 .
[Drawing 4] Drawing showing an example of the display result by the terminal unit shown in drawing 1 .
[Drawing 5] The block diagram showing the functional configuration of the W-CDMA personal digital assistant equipment which is the 2nd operation gestalt of the communication terminal concerning this invention.
[Drawing 6] Drawing showing an example of the alternative image data memorized by the database of the terminal unit shown in drawing 5 .
[Drawing 7] The flow chart which shows the procedure and the contents of display change control which are performed in the main control section of the terminal unit shown in drawing 5 .
[Drawing 8] Drawing showing an example of the display result by the terminal unit shown in drawing 5 .
[Drawing 9] The block diagram showing the functional configuration of the W-CDMA personal digital assistant equipment which is the 3rd operation gestalt of the communication terminal concerning this invention.
[Drawing 10] The flow chart which shows the procedure and the contents of display change control which are performed in the main control section of the terminal unit shown in drawing 9 .
[Drawing 11] The block diagram showing the functional configuration of the W-CDMA personal digital assistant equipment which is the 4th operation gestalt of the communication terminal concerning this invention.
[Drawing 12] The flow chart which shows a part for the first portion of the display change control procedure performed in the main control section of the terminal unit shown in drawing 11 , and its contents.
[Drawing 13] The flow chart which shows the display change control procedure performed in the main control section of the terminal unit shown in drawing 11 , and the second half part of the contents.
[Drawing 14] Drawing showing an example of the display result by the terminal unit shown in drawing 11 .
[Description of Notations]
1 -- Wireless section
2A, 2B, 2C, 2D -- Control section
3 -- I/O section

4 -- Power supply section
11 -- Antenna
12 -- Antenna common machine (DPX)
13 -- Sending circuit (TX)
14 -- Receiving circuit (RX)
15 -- Frequency synthesizer (SYN)
21 -- ROM
22 -- RAM
23A, 23B, 23C, 23D -- Main control section
24 -- Demultiplexing section
25 -- Multimedia processing section
26 -- Database
27 -- LCD control section
28 -- Voice codec
29 -- Sounder drive circuit
31 -- Camera (CAM)
32 -- Liquid crystal display (LCD)
33 -- Microphone
34 -- Loudspeaker
35 -- Key input section (KEY)
36 -- Sounder
41 -- Power circuit (P. S)
42 -- Charge circuit (CHG)
43 -- Dc-battery
231,233,235,238 -- Selection display-control function
232 -- Alternative image receiving storage control function
234,237 -- Change directions reception detection function
236 -- Meeting message control function

[Translation done.]

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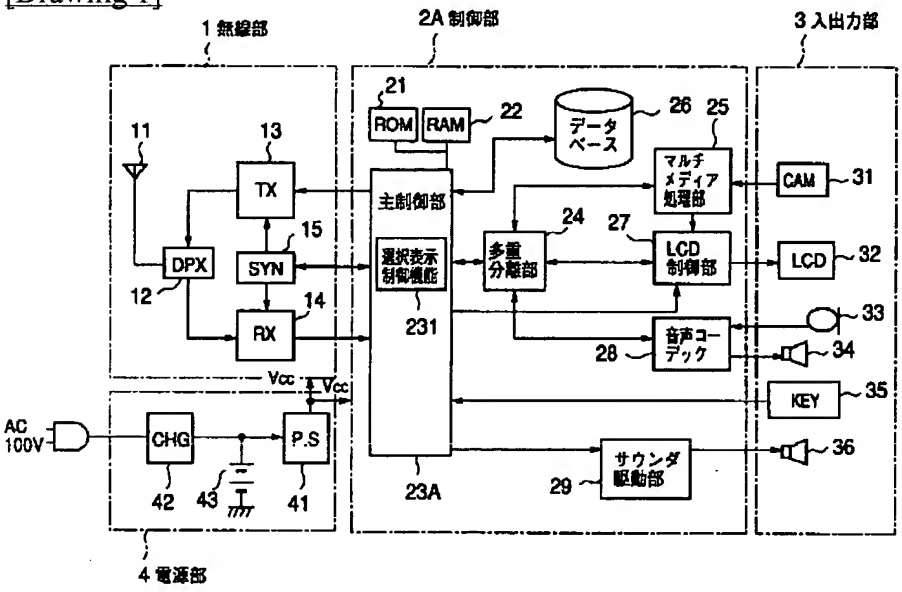
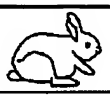
DRAWINGS

[Drawing 1]

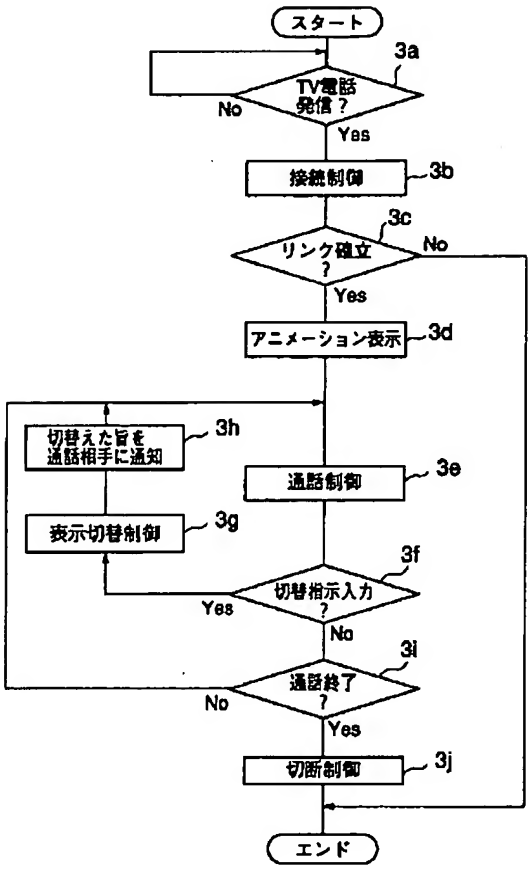


1: Wireless section
2A: Control section
3: I/O Section
4: power supply
25: multimedia process section
26: database
27: LCD control
2A: Demultiplexer/multiplexer
28: Voice Codec
34: loudspeaker
32: LCD
36: Sound
33: microphone
31: Camera
13: Sending unit
23A: microprocessor

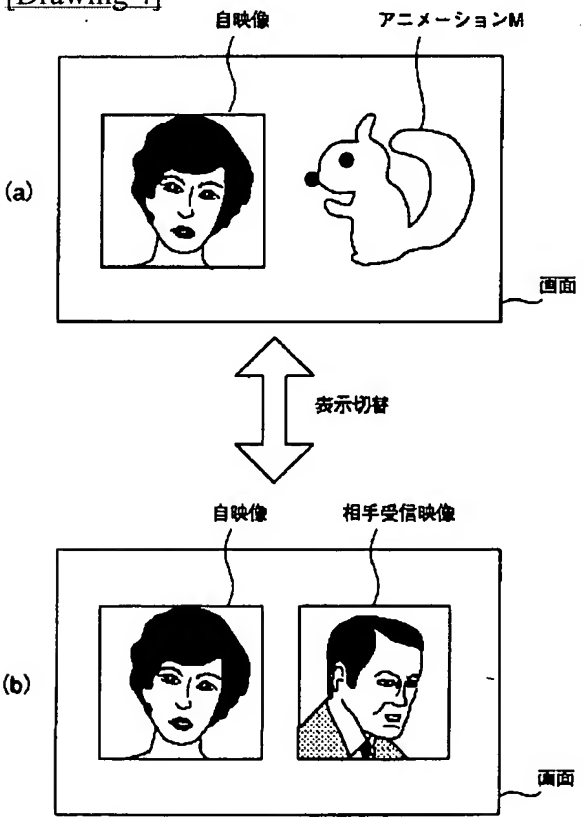
[Drawing 2]

電話番号	アニメーション	
09012345678		M
0423456789		N
09087654321		

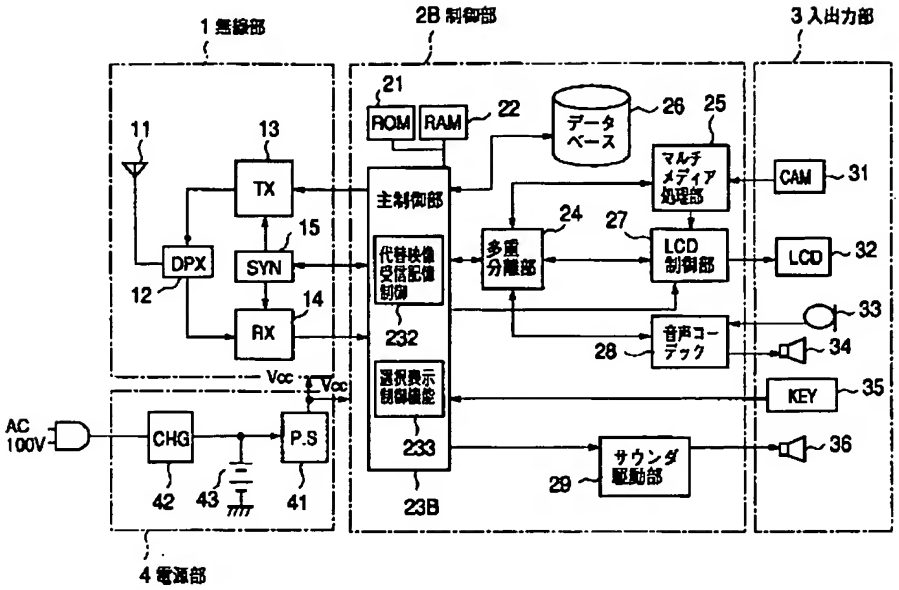
[Drawing 3]



[Drawing 4]



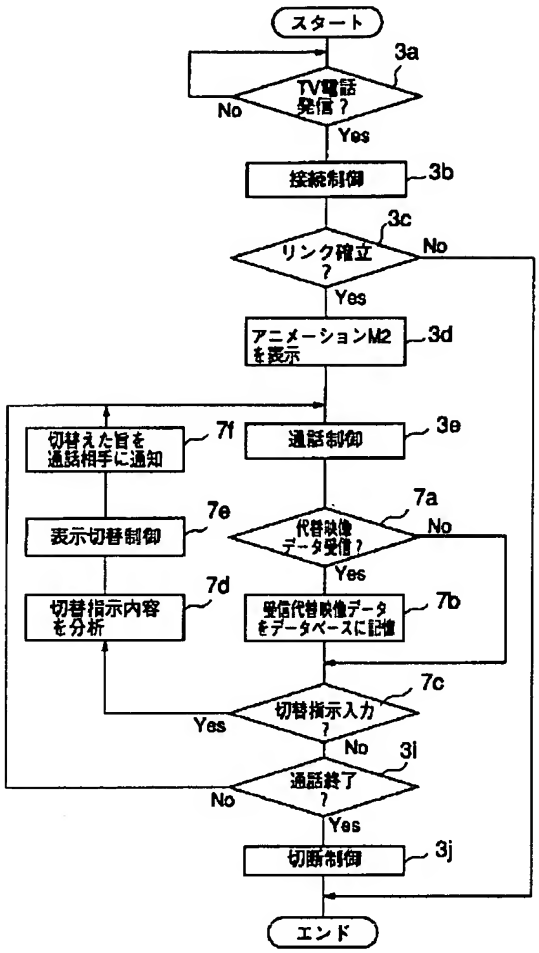
[Drawing 5]



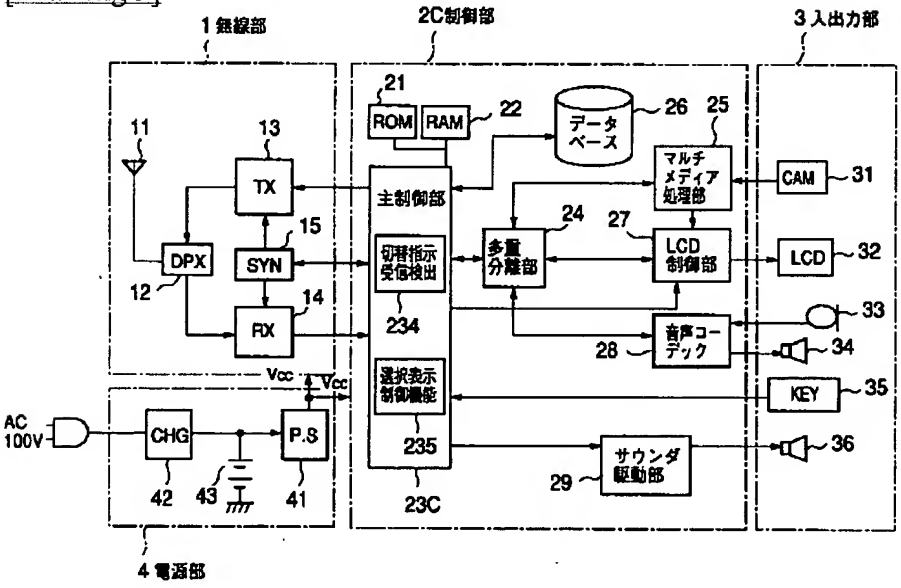
[Drawing 6]

電話番号	No.	アニメーション
09012345678	M1	
	M2	
0423456789	M1	
09087654321	M1	
	M2	

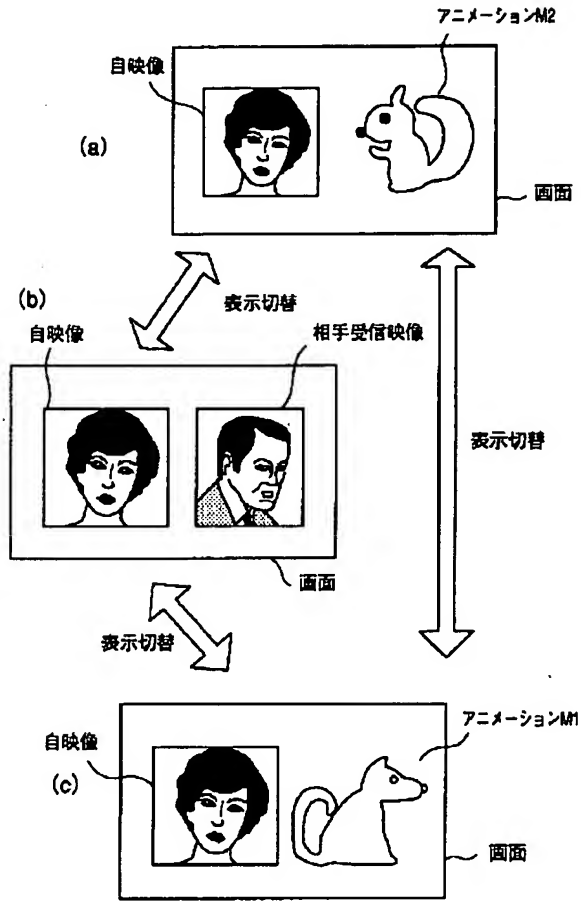
[Drawing 7]



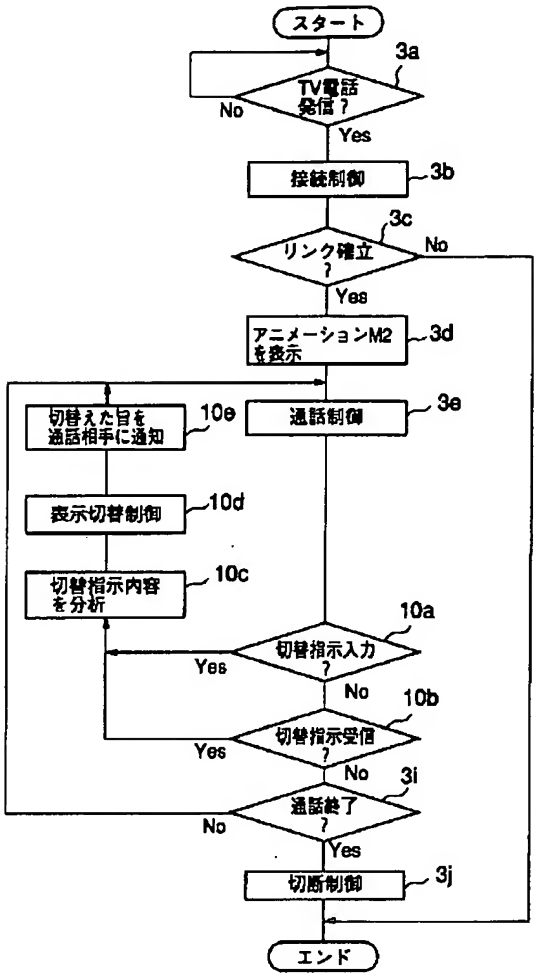
[Drawing 9]



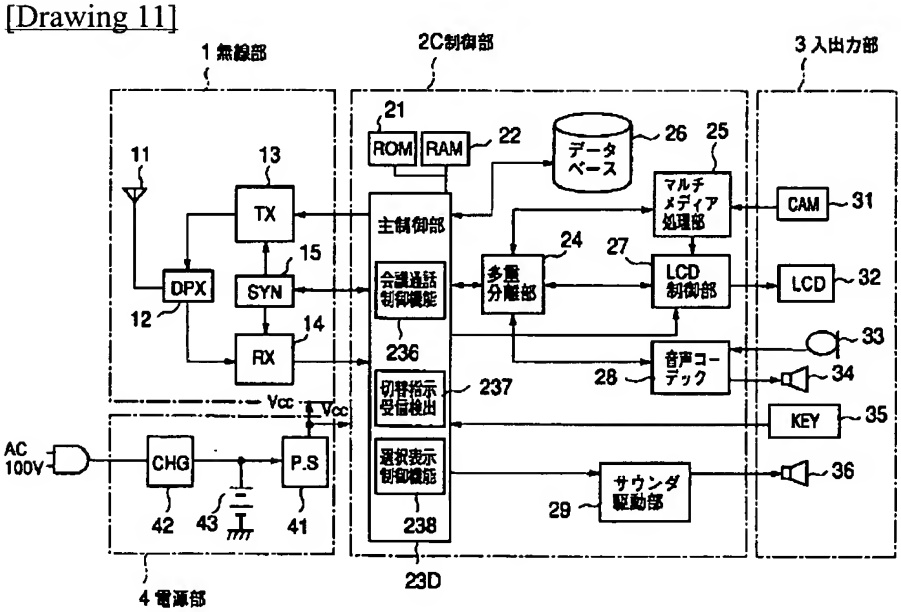
[Drawing 8]


アニメーションM2
自映像
(a)
画面
(b)
表示切替
自映像
相手受信映像
表示切替
画面
表示切替
アニメーションM1
自映像
(c)
画面

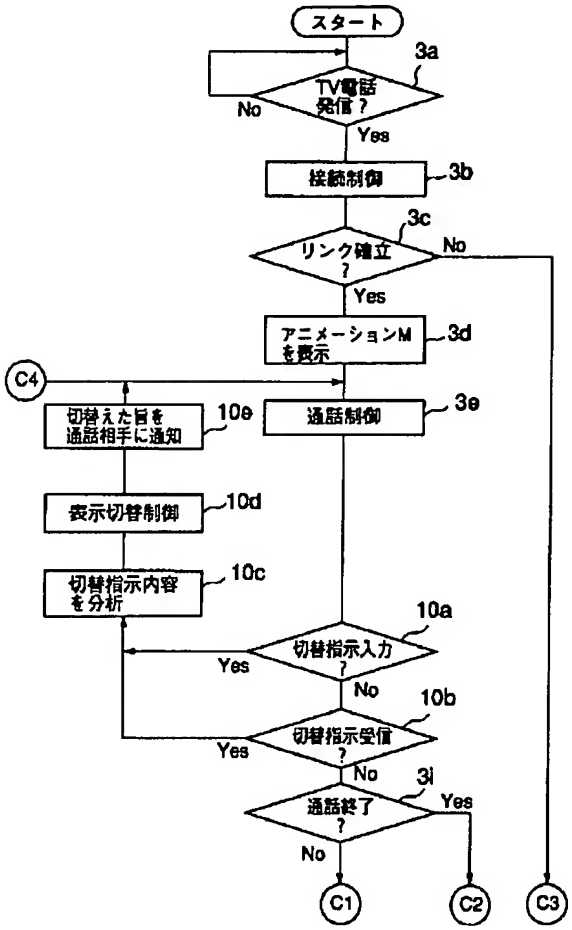
[Drawing 10]



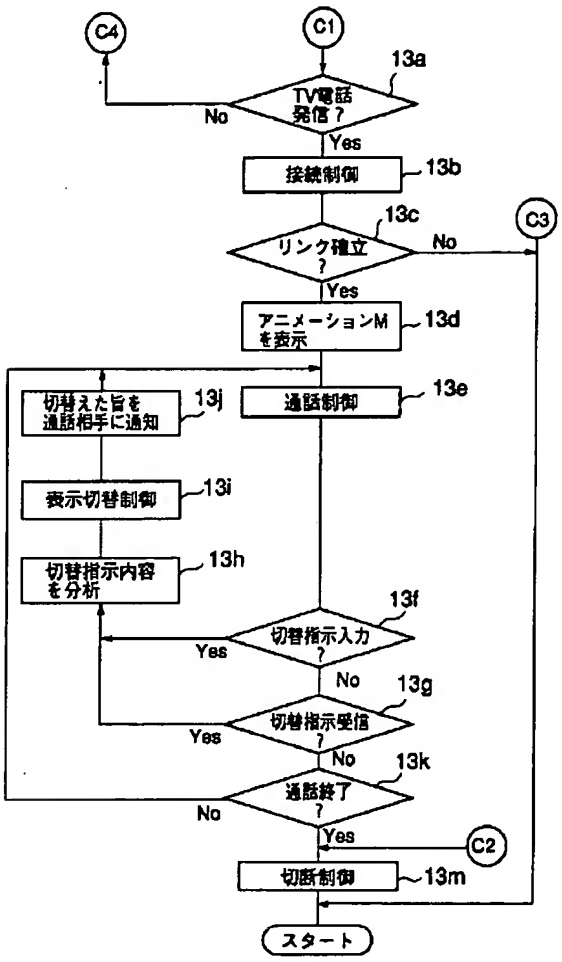
[Drawing 11]



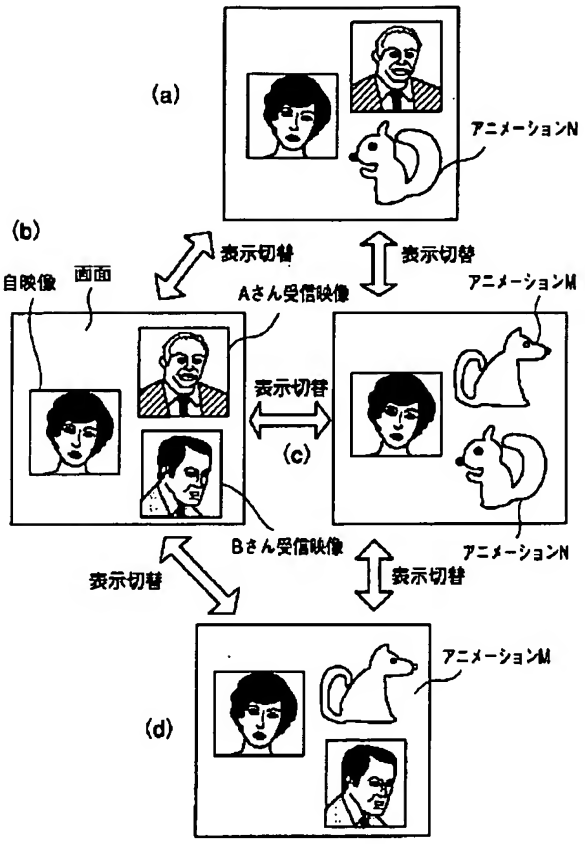
[Drawing 12]


スタート
3a
TV電話発信？
No
Yes
接続制御
3b
3c
リンク確立？
No
Yes
アニメーションMを表示
3d
C4
切替えた旨を通話相手に通知
10e
通話制御
3e
表示切替制御
10d
切替指示内容を分析
10c
10a
切替指示入力？
Yes
No
10b
切替指示受信？
Yes
No
3i
通話終了？
Yes
No
C1
C2
C3

[Drawing 13]


C4
C1
13a
TV電話発信？
No
Yes
接続制御
13b
13c
リンク確立？
No
C3
Yes
アニメーションMを表示
13d
切替えた旨を通話相手に通知
13j
通話制御
13e
表示切替制御
13i
切替指示内容を分析
13h
13f
切替指示入力？
Yes
No
13g
切替指示受信？
Yes
No
13k
通話終了？
No
Yes
C2
切断制御
13m
スタート

[Drawing 14]



[Translation done.]